

C. B. WILSON. *North-American Parasitic Copepods belonging to the Family Caligidæ.*—Parts 3 & 4. *A Revision of the Pandariniæ and Cecropiniæ.* Proc. U.S. Nat. Mus. vol. xxxiii. pp. 323-490, plates xvii.-xliii. December 1907.

THE parasitic Copepoda are a group of which the study is rendered particularly difficult by the great changes which take place during growth, by the remarkable and varied sexual dimorphism, and by the absence, in recent years, of anything like a serious revision of the group or of any considerable part of it. This last difficulty Dr. Wilson has courageously set himself to remove in the series of memoirs of which this is the latest. That his work will be of very great value to future students cannot be doubted. The material at his disposal is larger than in the case of most earlier writers; he has been able to examine and to identify the larval stages of a number of species in the different subfamilies; the figures which he gives are numerous, and, if somewhat inartistic and lacking in detail, are clear and apparently accurate. It is much to be regretted, however, that a little more trouble was not taken at the outset to make quite clear the relation between the morphology of the parasitic groups and that of the free-living forms. Dr. Wilson recognizes "twelve pairs of appendages, namely, two pairs of antennæ, one pair of mandibles, two pairs of maxillæ, two pairs of maxillipeds, and five pairs of swimming-legs." How this series of appendages is to be compared with that of the typical free-swimming Copepods we are not told, nor is it easy to guess. W. T. C.

MISCELLANEOUS.

The Genotype of Cidaris.

To the Editors of the Annals and Magazine of Natural History.

GENTLEMEN,—Dr. H. L. Clark's able advocacy of his views in the June number of the 'Annals' helps to make clear the precise difference between us.

Except for a few advocates of pre-Linnean and non-binominal names, we all agree to ascribe *Cidaris* to Leske. It follows by the rules that the genotype must be one of the species assigned by Leske himself to *Cidaris*. Being unable to discover on what grounds other authors had selected *C. papillata*, I applied the rules, and found these to lead to the same result. Rightly or wrongly, Dr. Clark accepts no other of Leske's species as a *Cidaris* at all, and is therefore bound either to accept *C. papillata* or to reject the generic name. Essentially he does accept it, and it is with the next step that trouble begins.

We all agree that Leske's sections I., II., and III. represent three

distinct species. Which of them is to be regarded as the true *C. papillata*? My application of the rules led me to decide on no. III. Dr. Clark objects to my application, but arrives, like every one else, at the same result. Now comes the divergence. I maintain that if species no. III. is rightly called *Cidaris papillata*, it must be the genotype. Dr. Clark rejects this obvious course and fixes on no. II., which was first made a separate species by Lamarck under the name *Cidarites tribuloïdes*. But a species unrecognized as such by Leske cannot (by Internat. Code, Art. 30, II. e, a) be the genotype of Leske's own genus, unless, indeed, it prove after all to be a synonym of *C. papillata*, in which case it must take that name.

Why does Dr. Clark refuse to take *C. papillata* s. str. as the genotype? I accept his disclaimer of the reason I gave: "because *Dorocidaris* A. Ag. thus becomes a synonym of *Cidaris*," and quote his own words: "A. Agassiz in 1869 removed *papillata* s. str. to *Dorocidaris*." It would be more correct to say that in 1863 (Bull. Mus. Comp. Zool. i. p. 17) A. Agassiz restricted "*Cidaris* Klein" to *C. thoursii*, *C. tribuloïdes*, *C. annulata*, *C. baculosa*, and allied species, and that he removed to *Orthocidaris* Ag. *C. hystrix*, *C. affinis*, and "*C. papillata* Flem.," but that, finding the name *Orthocidaris* preoccupied by Cotteau, in 1869 he altered it to *Dorocidaris*. The type of *Dorocidaris* was not fixed; but, since in the 'Revision of the Echini' Mr. Agassiz (p. 105) recognized that all the species he had referred to it were synonyms of *C. papillata* Leske, it follows that the genotype of *Dorocidaris* is *Cidaris papillata* Leske. Whether the *Cidaris* of A. Agassiz, 1863 and 1872, can correctly be regarded as equal to a restricted *Cidaris* Klein need not be discussed; it is, however, interesting to note that it was not claimed as in any way representing *Cidaris* Leske—that position was reserved for *Dorocidaris*. It follows, then, that from the beginning *Dorocidaris* was a synonym of *Cidaris* Leske, and therefore those who accept *Cidaris* Leske must reject *Dorocidaris*. In a word, you cannot make *Cidaris papillata* s. lato the type of *Cidaris*, and *Cidaris papillata* s. str. the type of *Dorocidaris*.

Mr. P. Thiéry has kindly pointed out to me that, in resuscitating the name *Gymnocidaris* A. Ag., 1863, I overlooked the prior use of the name by L. Agassiz (1838, 'Monogr. des Salenies,' p. 3). This name has been re-established by Mr. Lambert (see Zool. Record for 1900). Apparently, then, a name is still required for "*Cidaris* Klein restr. A. Ag."

Two further criticisms made by Dr. Clark need consideration.

I said that J. E. Gray (1825) fixed the genotype as *C. imperialis* Lam. Dr. Clark says "He simply mentions" that species "as an example of *Cidaris*, in contrast to *Diadema*." This is an extraordinary representation of Gray's action. The paper is a professedly systematic paper by a revising systematist, being "An attempt to divide the Echinida, or Sea Eggs, into natural Families." It deals with a large number of genera, many of them new, and even though

Gray did not use the expression "type," except in his last paragraph, we have only to compare it with other papers by Gray in the same volume to see that the single species quoted were intended by him as genotypes. If, then, Gray is put out of court by the rigid application of the Code, *à fortiori* must this be the case with Brandt and others.

"It seems to" Dr. Clark "absurd to suppose that Brandt (1835) expected or intended that *both* his 'Section A' and 'Section B' of *Cidaris* were to be called *Phyllacanthus*." This is not quite what I said. In the first place, Brandt did not mention a Section A and Section B of *Cidaris*. He established *Phyllacanthus* as a new subgenus of *Cidaris* (or *Cidarites* Lam., as he called it), and he said in his diagnosis of *Phyllacanthus* that the ambulaera might be straight or waved. He then divided *Phyllacanthus* into two Sections: A, with ambulaera straight; B, with ambulaera waved. Since the collection of Mertens contained only examples of one species—*C. (Phyllacanthus) dubia*—and since this came into Section B, Brandt mentioned Section A in the footnote alone. The type of Section A is undoubtedly *Cidarites tribuloides* Lam.; the type of Section B was not fixed. From this it is not so clear to me as it is to Dr. Clark that Brandt "selected *dubia* as the type of *Phyllacanthus*."

Having disallowed Gray and admitted that Brandt does not "distinctly state that *tribuloides* is the type of *Cidaris* s. str.," Dr. Clark then falls back on elimination, and contends for stability of nomenclature, more particularly the nomenclature established in the 'Revision of the Echini.' Mr. Alexander Agassiz, when he penned the admirable chapter on "Nomenclature" in that great work, frankly stated (p. 13) that he did not intend to impose on any one the names there adopted, often in defiance of the Codes. It is rather too late now for his coadjutor to begin the attempt. We all desire stability of nomenclature, but the best way of attaining it is to see that the foundations are secure and the superstructure in accord with the canons of the builder's art.

F. A. BATHER.

Natural History Museum,
London, S.W.,
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Note on the Squirrel-Genus "Zetis." By OLDFIELD THOMAS.

I regret to find that in giving the name *Zetis* to the long-nosed Oriental squirrels of the *pernyi-rufigenis* group (Journ. Bombay Nat. Hist. Soc. xviii. p. 244, 1908) I overlooked the fact that Père Heude had already proposed for the genus the name *Dremomys* (Mem. H. N. Empire Chinois, iv. pt. 2, p. 54, 1898). That name must therefore be used for all the squirrels referred to *Zetis* in my list, including the new Formosan species *Dremomys owstoni*.